

Appl. No. 10/644,475
Amdt. Dated January 25, 2006
Reply to Final Office Action of November 25, 2005

IN THE CLAIMS:

1. (previously presented) A propeller shaft for a vehicle comprising an elongated hollow cylindrical body and a reduced profile intermediate portion having a reduced diameter as compared to the body and defining two transition areas, one at each end thereof, between the intermediate portion and the body, wherein in the region of at least one transition area prior to receiving a sufficient axial load from a crash event, at least part of the cylindrical body lies over the intermediate portion such that upon receiving the sufficient axial load and during fracture in the region of at least one of the transition areas, the body telescopes over the intermediate portion.

2. (original) A propeller shaft according to claim 1 wherein the shaft is metal.

3. (canceled)

4. (canceled)

5. (original) A propeller shaft according to claim 1 wherein the intermediate portion comprises between 5 and 30 percent of the length of the propeller shaft.

6. (original) A propeller shaft according to claim 1 wherein the intermediate portion extends substantially parallel to the cylindrical body.

7. (original) A propeller shaft according to claim 1 wherein the intermediate portion is angled with respect to the cylindrical body.

8. (previously presented) A frangible telescopic propeller shaft comprising:

an elongated hollow cylindrical body;

Appl. No. 10/644,475
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a reduced diameter intermediate portion along a length of the body and distanced from an end of the body, the intermediate portion defining two transition areas with respect to the body; and

at least one of the transition areas being a spin-formed transition area comprising a frangible feature wherein at least a part of the cylindrical body lies over the intermediate portion prior to receiving a sufficient axial load from a crash event such that, in response to the sufficient axial force, the frangible feature fractures to telescope the body over the intermediate portion.

9. (original) A propeller shaft according to claim 8 wherein the shaft is metal.

10. (original) A propeller shaft according to claim 8 wherein the intermediate portion comprises between 5 and 30 percent of the length of the propeller shaft.

11. (original) A propeller shaft according to claim 8 wherein the intermediate portion extends substantially parallel to the cylindrical body.

12. (original) A propeller shaft according to claim 8 wherein the intermediate portion is angled with respect to the cylindrical body.

13. (original) A propeller shaft according to claim 8 wherein the cylindrical body lies over the intermediate portion by between 1 and 10 mm.

14. (previously presented) A method of making a propeller shaft comprising:

providing an elongated hollow cylindrical body;

spin forming a reduced profile intermediate portion along a length of the body and distanced from an end of the body, the intermediate portion defining at least two transition areas with respect to the body; and

Appl. No. 10/644,475

Amdt. Dated January 25, 2006

Reply to Final Office Action of November 25, 2005

thereafter, in the region of at least one of said transition areas, applying an axial force to the body to fold the at least one transition area onto itself such that at least a part of the cylindrical body lies over the intermediate portion in the region of the at least one transition area prior to receiving a sufficient axial load from a crash event.

15. (original) A method according to claim 14 comprising, while applying the axial force, simultaneously supporting the exterior surface of the cylindrical body to maintain the body diameter.

16. (original) A method according to claim 15 wherein supporting includes supporting the exterior surface of the cylindrical body with at least one roller.

17. (original) A method according to claim 15 wherein said intermediate portion defines two transition areas, one at each end thereof.

18. (original) A method according to claim 15 wherein the spin-forming includes cold forming.

19. (original) A method according to claim 15 wherein the axial force is applied while the exterior surface of the cylindrical body is spin-formed to maintain its diameter.